

**Learn rainfall-runoff
and flood routing**

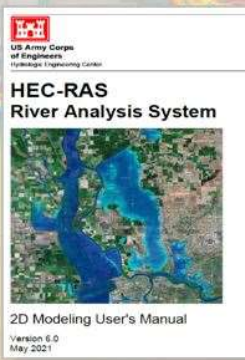
**Build, run, and animate
1D and 2D flood models**

HEC-HMS

HEC-RAS

Master free software in this intensive, interactive course

Aug Dates changed due to Covid 2022



**Registration forms
below**

- Rainfall Runoff
- Risk Assessment
- Hydraulic Structures
- GIS Interfacing
- Flood Mapping
- Output Animations
- ★ Professional Membership Discounts
- ★ Academic and Group Rate Discounts
- ★ Professional Development Certification

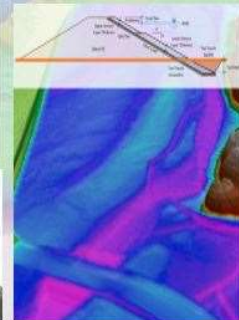


Lead Instructor: Dr. Steven Joynes, Golovin

Steven has over 30 years' experience in rainfall runoff modelling, hydraulic design, and flood mapping. He has conducted HEC-HMS and HEC-RAS training courses in New Zealand since 2011.

Online Instructor: Krey Price, Surface Water Solutions

Krey is a civil engineer with a 20-year, international career focussed on river mechanics and hydraulic modelling. Krey has led over 100 worldwide HEC-RAS training courses.



Dates changed due to Covid

- Day 1 15 March: HEC-HMS Essentials
- Day 2 16 March: HEC-HMS Advanced
- Day 3 17 March: HEC-RAS Essentials
- Day 4 Friday: HEC-RAS Advanced

Attention water resources professionals, regulators, consultants, academics, and practitioners: Save the date for an intensive, interactive course covering the full range of hydrology and hydraulics.

Tuesday 15 March
HEC-HMS Essentials

Wednesday 16 March
HEC-HMS Advanced

Thursday 17 March
HEC-RAS Essentials

Friday 18 March
HEC-RAS Advanced

Dates changed due to Covid
– see below for schedule

Schedule and pricing:

Day	Course	Daily Price	HEC-HMS or HEC-RAS Price	HEC-HMS and HEC-RAS Price
1	HEC-HMS Part 1	\$800	\$ 1,400	\$ 2,400
2	HEC-HMS Part 2	\$800		
3	HEC-RAS Part 1	\$800	\$ 1,400	
4	HEC-RAS Part 2	\$800		

Registration discounts are available for multiple courses, multiple registrants from a single organisation, and members of professional organisations (NZSOLD, NZHS, and Engineering NZ). Previous course attendees can qualify for additional discounts. Details must be provided when requesting a discount.

Please direct pricing enquiries to steven@golovin.co.nz.

Contents:

Course 1: HEC-HMS Essentials

- Review of TP108
- Overview of Precipitation-Runoff Processes
- Basin Precipitation
- Rainfall Loss Rates Computation
- Channel Routing
- Multiple catchment and stream modelling
- Basin Model Manager
- Meteorological Model Manager
- Control specifications and time-series data
- Conducting simulation runs

Course 2: HEC-HMS Advanced

- Using GIS tools in HEC-HMS
- Shared component data
- Gridded boundary condition data
- Model calibration
- Using 2D Flow in HEC-HMS
- Working with Depth-Area Analysis
- Working with Optimisation Trials
- Working with Time Series Results
- Exporting results for use in HEC-RAS
- Creating a basin map

Course 3 : HEC-RAS Hydraulics Essentials

- File management with HEC-RAS
- RAS Mapper and GIS interfacing
- Importing terrain files
- Setting up a 1D network
- Entering reach data
- Entering cross sectional data
- Entering roughness data
- Junctions
- Bridges and culverts
- Steady and unsteady flow
- Executing plan files
- Floodplain analysis
- Interpreting and checking results

Course 4: HEC-RAS Hydraulics Advanced

- Computational mesh generation
- Creating 2D areas
- Hydrologic boundary conditions
- Time step selection
- Entering unsteady flow data
- Computational options and tolerances
- Setting up plan files
- Adding internal structures
- Breaching dams and lateral weirs
- Viewing and exporting in RAS Mapper
- Troubleshooting models
- Calibrating models
- Building your own model from scratch

Location:

The course will be done by Zoom due to the Omicron outbreak:

There will be a 3-hour teaching session followed days later by a 90 minute case study follow up.

All participants will get a recording of the sessions.

The schedule is

HEC-HMS - Essentials

Tuesday 15th March and Thursday 17th March follow up

HEC-HMS - Advanced

Tuesday 22nd March and Thursday 24th March follow up

HEC-RAS - Essential

Tuesday 29 March and Thursday 31st March follow up

HEC-RAS - Advanced

Tuesday 5th April and Thursday 7th April follow up

Terms and Conditions

1. Registration is by 1st in - 1st paid basis.
2. If you cannot attend a course, a substitute participant is welcome.
3. If you withdraw from a course in writing or email more than 20 working days prior to the course, you will receive a full refund less a \$50 administration fee.
4. If you withdraw with 10 working days' notice, you will receive a 50% refund.
5. After this, if you do not attend the course there is no refund.
6. If a course is rescheduled or cancelled due to lack of numbers, or any other valid reason, you will be advised 10 working days before the course and your course fee will be refunded in full.
7. Participants are responsible for their own travel/accommodation bookings and no compensation will be made should the course be rescheduled or cancelled.
8. Participants must bring their own laptop. Install HEC-HMS and/or HEC-RAS and test the software prior to attending the course. Download links will be provided to all registrants.
9. To hire a laptop pre-loaded with all required software and tutorials for \$50 per day, please contact steven@golovin.co.nz.

Authorisation Signature

Name _____

Signature _____ Date _____